

METHODS AND APPARATUS FOR PROVIDING INFORMATION AT THE POINT OF USE FOR AN INSULATING GLASS UNIT

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FIELD OF THE INVENTION

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The present invention relates generally to insulating glass units. More particularly, the present invention relates to methods and apparatus for masking a planar surface of an insulating glass unit and providing information at the point of use of the insulating glass unit

BACKGROUND OF THE INVENTION

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In most industrialized countries, windows touch people's lives everyday. Wherever people work and live there are windows. Windows allow the occupants of a building to view the outside world while allowing sun light to enter the interior of the building. Sunlight is a natural antidepressant and helps the human body produce vitamin D. Thus, a certain amount of sunshine is essential to mental and physical well being.

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In extreme climates significant energy may be lost through windows during the winter when a building is being heated, and/or during the summer when a building is being cooled. With the rising cost of energy, efforts have been made to provide homes and other buildings with insulation that will more efficiently prevent the transfer of heat between the inside and the outside of a building. Insulating glass units have been developed to reduce the amount of heat transfer through windows.

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There are basically three types of insulating glass units commercially available today. These three types are often referred to as single glazing, double glazing, and triple glazing. Double glazed insulating glass units are the most common. These insulating glass units include a space sealed between two panes of glass. This sealed space provides insulation, the insulating effect may be enhanced by filling the space with an insulative gas such as argon, or krypton.

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Compared with a single pane, a double glazed insulating glass unit can cut heat loss through a window nearly in half.

Because of the dramatic energy savings which can be achieved with insulating glass units, building codes in many jurisdictions have been revised to require the installation of insulating glass units. The relative energy performance of these insulating glass units is clearly an important factor to be considered when windows are purchased by a consumer. The federal government of the United States of America has developed an Energy Star designation which may be used to identify windows which meet certain energy performance criteria. In another attempt to help consumers make informed decisions regarding window purchases, the National Fenestration Rating Council (NFRC) has recently instituted new labeling requirements for windows. The NFRC requirements include both a permanent marking and a temporary label. The NFRC label includes ratings for U-factor, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT), and air leakage (AL). These ratings must be provided for both residential and non-residential applications. All of these ratings typically vary from one window to the next. The labeling of windows may also include additional information such as a model number, the window style, the window dimensions, and a date code. This information also typically varies from one window to the next. The labeling requirements described above present a challenge to window manufacturers since a great deal of information is required, and since this information frequently varies from one window to the next.

Human beings have a relatively narrow temperature range in which they are comfortable. Unfortunately, infrared (IR) energy from the sun entering a room through a window can quickly raise the temperature to an uncomfortable level. Many windows include low emissivity coatings that have been developed to prevent heat spikes within a room by reflecting a large portion of

incident infra red energy. Recently, self cleaning coatings have also been developed for use on window glass. These coatings may eliminate the need to clean the glass of an insulating glass unit.

Because the glass of an insulating glass unit typically includes special coatings, temporary labels that are applied to the glass are typically manufactured using special paper and special inks so that the coatings on the glass will not be damaged. The coatings on an insulating glass unit may also be damaged during transportation to a building site, or during the building process. The building process typically involves the efforts of a variety of crafts people such as carpenters, masons, and painters. During the building process the coatings on an insulating glass unit can be scratched or covered with paint.

Summary of the Invention

The present invention relates generally to multiple-pane insulating glass units. Methods in accordance with the present invention may be used to provide information at the point of use of a window assembly. In one advantageous method in accordance with the present invention, a masking material comprising a substrate and an adhesive disposed over a first face of the substrate is provided. One or more strips of masking material are applied to a surface of a pane of the window assembly, and information is printed on a second face of the substrate of the one or more strips of masking material.

In certain implementations, the step of printing information on the second face of the substrate of the one or more strips of masking material occurs before the step of applying the one or more strips of masking material to the surface of the pane. In other implementations, the step of printing information on the second face of the substrate of the one or more strips of masking

material occurs after the step of applying the one or more strips of masking material to the surface of the pane.

In another advantageous method in accordance with the present invention, a masking material comprising a substrate and an adhesive disposed over a first face of the substrate is provided. One or more strips of masking material are applied to a surface of a pane of a window assembly, and an information bearing sheet is applied over the one or more strips of masking material. In certain implementations, the information bearing sheet comprises a sheetstock and a second adhesive disposed upon a first face of the sheetstock. In one aspect of the invention, the second adhesive has substantially greater adhesion than the first adhesive. In another aspect of the invention, the sheetstock comprises a substantially frangible material (e.g., paper).

A window assembly in accordance with one implementation of the present invention includes an insulating glass unit including a first pane having a first surface. A protective covering is advantageously disposed over a masked portion of the first surface of the first pane. In certain implementations, the protective covering comprises a plurality of strips disposed across the first surface of the first pane, and the first surface of the first pane has an unmasked apron extending between an outer periphery of the protective covering and an outer periphery of the first pane.

In certain implementations, the plurality of strips are disposed in a sequentially overlapping fashion with each subsequent strip overlapping a portion of a preceding strip. When this is the case, the protective covering can be easily removed by grasping the lower-most strip and removing the protective covering as a single unit. In certain implementations, the plurality of strips may comprise n strips with the n th strip partially overlapping an $(n-1)$ strip of the

plurality of protective strips. When this is the case, the first strip may include indicia indicating that the first strip should be the first one removed.

In an advantageous implementation, the window assembly may further include an information bearing sheet overlaying the protective covering. In certain implementations, the information bearing sheet comprises a sheetstock having a first side and a second side. The sheetstock of the information bearing sheet may include first indicia printed on a first side thereof and second indicia printed on a second side thereof. The information bearing sheet may also include a second adhesive overlaying the first indicia and the first side of the sheetstock. In an advantageous implementation, the second adhesive has substantially greater adhesion than the first adhesive.

In certain implementations, the second adhesive and the protective covering are both substantially transparent to allow viewing of the first indicia therethrough. In some implementations, the second adhesive and the protective covering may both be substantially translucent. In some cases the information bearing sheet may include indicia comprising an advertisement for goods likely to be purchased by a user of the window assembly. Additionally, the information bearing sheet may include indicia comprising a National Fenestration Rating Council rating for the window assembly.

Methods in accordance with the present invention may be used to protect a masked area of a planar surface. In one such method, a masking material having a known width is provided, and the width of the masking material is provided to a masking calculator. A desired width of the area to be masked is also provided to the masking calculator. The masking calculator may then be instructed to determine an optimal number of strips. The masking calculator may also advantageously calculate an overlap dimension. The optimal number of strips may be applied to

the planar surface in an overlapping fashion according to the overlap dimension. In certain implementations, the strips are applied in a sequential fashion with each subsequent strip partially overlapping a preceding strip by the overlap dimension. In some implementations, the step of providing the desired width of the masked area to the masking calculator includes the step of detecting a dimension of the planar surface.

Methods in accordance with the present invention may be used to mask insulating glass units of various sizes. In one method in accordance with the present invention, a width of a masking material is selected so that a small sized insulating glass assembly can be masked with a single strip of the masking material. Larger size insulating glass assemblies can be masked with a plurality of strips of masking material.

In certain implementations, a plurality of strips may be applied to a surface of an insulating glass unit to form a protective covering. In an advantageous implementation, these strips may be located so that they define an unmasked apron extending between an outer periphery of the protective covering and an outer periphery of the insulating glass unit. When this is the case, trimming of the protective covering is typically not required. This is advantageous since, in some cases, trimming of masking material (for example with a blade) may result in damage to the coatings of an insulating glass unit.

Many factors are driving changes in insulating glass unit manufacturing. As describe above, the National Fenestration Rating Council (NFRC) has recently instituted new labeling requirements for windows. The NFRC requirements include both a permanent marking and a temporary label. The NFRC label includes ratings for U-factor, Solar Heat Gain Coefficient (SHGC), Visible Transmittance (VT), and air leakage (AL). These ratings must be provided for both residential and non-residential applications. The labeling of windows may include

additional information such as a model number, the window style, the window dimensions, and a date code.

The labeling requirements described above present a challenge to window manufacturers since a great deal of information is required, and since this information frequently varies from one window to the next. A typical insulating glass production line may produce a number of different models on a made to order basis. As insulating glass units move down a production line, each insulating glass unit may have different labeling requirements. Methods in accordance with the present invention, may be used to provide labeling which is matched to each particular insulating glass unit.

Description of the Drawings

Figure 1 is a perspective view of an assembly in accordance with an exemplary embodiment of the present invention.

Figure 2 is a perspective view of an assembly in accordance with an additional exemplary embodiment of the present invention.

Figure 3 is a perspective view of an assembly in accordance with yet another exemplary embodiment of the present invention.

Figure 4 is a perspective view of an additional assembly including an insulating glass unit and a protective covering from the assembly of figure 3.

Figure 5 is a perspective view of an additional assembly in accordance with the present invention.

Figure 6 is a perspective view of an assembly in accordance with an additional exemplary embodiment of the present invention.

Figure 7 is a perspective view of an assembly in accordance with still another embodiment of the present invention.

Figure 8 is a flow chart illustrating an exemplary method in accordance with the present invention.

5 Figure 9 is a perspective view of an assembly in accordance with an exemplary embodiment of the present invention.

Figure 10 is a flow chart illustrating an additional exemplary method in accordance with the present invention.

Figure 11 is a perspective view of an assembly in accordance with an exemplary embodiment of the present invention.

Figure 12 is a perspective view of an assembly in accordance with an exemplary embodiment of the present invention.

Detailed Description of the Preferred Embodiment

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

The following detailed description should be read with reference to the drawings, in which like elements in different drawings are numbered identically. The drawings, which are not necessarily to scale, depict selected embodiments and are not intended to limit the scope of the invention. Examples of constructions, materials, dimensions, and manufacturing processes are provided for selected elements. All other elements employ that which is known to those of skill in the field of the invention. Those skilled in the art will recognize that many of the examples provided have suitable alternatives that can be utilized.

Figure 1 is a perspective view of an assembly 100 in accordance with an exemplary embodiment of the present invention. Assembly 100 includes a pane 102 having a first surface 104. A protective covering 120 is disposed over a masked portion 122 of first surface 104 of

pane 102. In the embodiment of figure 1, protective covering 120 comprises a plurality of strips. First surface 104 of pane 102 also includes an unmasked apron 124 extending between an outer periphery 126 of protective covering 120 and an outer periphery 128 of pane 102.

In the embodiment of figure 1, the strips forming protective covering 120 are disposed in a sequentially overlapping fashion with each subsequent strip overlapping a portion of a preceding strip so that the protective covering can be easily removed one strip at a time. More particularly, protective covering 120 includes a first strip 130A and a second strip 130B which partially overlaps first strip 130A. Protective covering 120 also includes a third strip 130C which partially overlaps second strip 130B. It is to be appreciated that protective covering 120 may comprise any number of strips without deviating from the spirit and scope of the present invention.

In a preferred embodiment, each strip comprises a substrate 132 having a first surface 106A and a second surface 106B. In a useful embodiment, each strip includes a first adhesive 134 disposed upon first surface 106A of substrate 132. In the embodiment of figure 1, a fourth strip 130D of protective covering 120 includes an indicia 142 disposed upon second surface 106B of substrate 132.

Various embodiments of indicia 142 are possible without deviating from the spirit and scope of the present invention. For example, indicia 142 may include instructions, technical information, and/or advertisements. For example, indicia 142 may include instructions for removing protective covering 120. More particularly, indicia 142 may include instructions indicating which strip of protective covering 120 should be removed first.

Assembly 100 of figure 1 may be used in conjunction with methods in accordance with the present invention. For example, a method of providing information at the point of use of

pane 102 may include the following steps. 1) Providing a masking material comprising a substrate 132 and a first adhesive 134 disposed upon a first surface of the substrate. 2) Applying a succession of strips to a first surface 104 of pane 102 in an overlapping fashions with each subsequent strip partially overlapping a preceding strip by an overlap dimension. 3) Printing information on the second surface of the substrate of at least one of the strips. Additional methods are possible without deviating from the spirit and scope of the present invention. For example, a method in accordance with the present invention may include the step of providing a masking material having a substrate with indicia printed on the second surface thereof prior to applying the substrate to the first surface of pane 102.

Pane 102 may comprise various materials without deviating from the spirit and scope of the present invention. Examples of materials which may be suitable in some applications which may include glass, metal, and plastics. Likewise, substrate 132 may comprise various materials without deviating from the spirit and scope of the present invention. Examples of materials which may be suitable in some applications include paper, metal foil, and polymeric film. Examples of polymeric materials which may be suitable in some applications include: polyethylene (PE), polypropylene (PP), polyvinyl chloride (PVC), polyurethane, polytetrafluoroethylene (PTFE), polyester (e.g., PET), polyamide, and polyimide.

Figure 2 is a perspective view of an assembly 200 in accordance with an additional exemplary embodiment of the present invention. Assembly 200 includes an insulating glass unit 236. Insulating glass unit 236 includes a first pane 202A, a second pane 202B and a spacer 238 interposed between first pane 202A and second pane 202B. First pane 202A, second pane 202B, and spacer 238 preferably define a interpane space. In some embodiments, an insulative gas (e.g., argon, krypton, and/or others) may be disposed within the interpane space. Embodiments

are also possible in which the interpane space contains air or vacuum. Insulating glass unit 236 may be generally referred to as a double glazed insulating glass unit. Other embodiments of insulating glass unit 236 are possible without deviating from the spirit and scope of the present invention. For example, insulating glass unit 236 may be a single glazed insulating glass unit, or
5 a triple glazed insulating glass unit.

First pane 202A of insulating glass unit 236 has a first surface 204. In the embodiment of figure 2, a protective covering 220 is disposed over first surface 204 of first pane 202A. In figure 2 it may be appreciated that, an information bearing sheet 244 is disposed over protective covering 220. In the embodiment of figure 2, information bearing sheet 244 comprises a
10 sheetstock 246 and a second adhesive 248 overlaying a first surface 208A of sheetstock 246.

In the embodiment of figure 2, protective covering 220 comprises a plurality of strips, each comprising a substrate 232 having a first surface 206A and a first adhesive 234 disposed over first surface 206A. In a useful embodiment, first adhesive 234 and second adhesive 248 may be selected such that second adhesive 248 has greater adhesion than first adhesive 234. In
15 this useful embodiment, first adhesive 234 may have a level of adhesion to first pane 202A which is selected so that substrate 232 can be easily removed from first pane 202A. Also in this useful embodiment, second adhesive 248 may have a level of adhesion that is selected to firmly adhere sheetstock 246 of information bearing sheet 244 to the strips of substrate 232 and to provide mechanical support for the strips. In a preferred embodiment, sheetstock 246 of
20 information bearing sheet 244 comprises a frangible material. In this preferred embodiment, information bearing sheet 244 may be configured to tear when each strip is removed from first pane 202A. Examples of frangible materials which may be suitable in some applications include paper.

In the embodiment of figure 2, a second indicia 242 is disposed on a second surface 208B of sheetstock 246 of information bearing sheet 244. Information bearing sheet 244 also includes a first indicia 240 printed on the first surface 208A of sheetstock 246 of information bearing sheet 244. In a preferred embodiment, first indicia 240 is visible to a viewer located at a point 5 250 located beyond one side of insulating glass unit 236. In this preferred embodiment, substrate 232 and first adhesive 234 of protective covering 220 are both substantially optically transparent and/or translucent. Also in this preferred embodiment, first pane 202A and second pane 202B are both substantially optically transparent. Finally, in this preferred embodiment, second adhesive 248 of information bearing sheet 244 is preferably also optically transparent and/or translucent. 10

Figure 3 is a perspective view of an assembly 300 in accordance with yet another exemplary embodiment of the present invention. Assembly 300 includes an insulating glass unit 336 having a first pane 302A. A protective covering 320 is disposed over a masked portion 322 of a first surface 304 of first pane 302A. In the embodiment of figure 3, protective covering 320 comprises a plurality of strips 330. First surface 304 of first pane 302A also has an unmasked apron 324 extending between an outer periphery 326 of protective covering 320 and an outer periphery 328 of first pane 302A. In figure 3, it may be appreciated that insulating glass unit 336 of assembly 300 includes a second pane 302B and a spacer 338. 15

Figure 4 is a perspective view of an additional assembly including insulating glass unit 20 336 and protective covering 320 from the assembly of figure 3. As described above, protective covering 320 has an outer periphery 326, and first surface 304 of first pane 302A includes an unmasked apron 324 extending between outer periphery 326 of protective covering 320 and an

outer periphery 328 of first pane 302A. In the embodiment of figure 4, a glue 352 has been applied to unmasked apron 324 of first pane 302A.

Figure 5 is a perspective view of an additional assembly in accordance with the present invention. The assembly of figure 5 includes a window sash 354 and the assembly of figure 4.

5 In the assembly of figure 5, window sash 354 has been positioned over insulating glass unit 336 so that insulating glass unit 336 is fixed to window sash 354 by glue 352 of figure 4. In figure 5 it may be appreciated that window sash 354 includes a plurality of inside edges 356. Also, referring to figure 5, it may be appreciated that protective covering 320 generally extends to inside edges 356 of window sash 354. In other words, outer periphery 326 of protective covering 320 is generally aligned with inside edges 356 of window sash 354.

The assembly of figure 5 may be transported to a construction site where window sash 354 may be painted. When this is the case, protective covering 320 will mask first surface 304 of first pane 302A so that no paint is applied to this surface. When painting is complete, strips 330 of protective covering 320 may be removed from first surface 304 of first pane 302A. Protective covering 320 may also protect first surface 304 of first pane 302A during manufacture, transportation, and installation of the assembly of figure 5.

Figure 6 is a perspective view of an assembly 400 in accordance with an additional exemplary embodiment of the present invention. Assembly 400 includes a pane 402 having a first surface 404. A protective covering 420 is disposed across first surface 404 of pane 402.

20 Protective covering 420 includes a first strip 430A.

First strip 430A of protective covering 420 of figure 6 comprises a substrate 432 and an adhesive 434 disposed over a first face of substrate 432. In figure 6, it may also be appreciated that first strip 430A includes a first tab 458A. In the embodiment of figure 6, first tab 458A

comprises a first portion 460 of substrate 432 that is folded so as to overlap a second portion 462 of substrate 432 so that the adhesive 434 covering first portion 460 is adhered to the adhesive 434 covering second portion 462.

Protective covering 420 of assembly 400 also includes a second strip 430B, a third strip 430C, and a fourth strip 430D. In the embodiment of figure 6, second strip 430B, third strip 430C, and fourth strip 430D include a second tab 458B, a third tab 458C, and a fourth tab 458D respectively.

Figure 7 is a perspective view of an assembly 500 in accordance with still another embodiment of the present invention. Assembly 500 includes a protective covering 520 disposed upon a first surface 504 of a first pane 502A of an insulating glass unit 536. In the embodiment of figure 7, protective covering 520 includes a first horizontal strip 570A and a second horizontal strip 570B. Protective covering 520 also includes a first vertical strip 572A and a second vertical strip 572B. In figure 7, it may be appreciated that first vertical strip 572A, second vertical strip 572B, first horizontal strip 570A, and second horizontal strip 570B define a generally rectangular outer periphery 526 of protective covering 520. In figure 7 it may also be appreciated that protective covering 520 has an inner periphery 564.

First surface 504 of first pane 502A includes an unmasked apron portion extending between outer periphery 526 of protective covering 520 and an outer periphery 528 of first pane 502A. In one method in accordance with the present invention, a window sash may be adhered to unmasked portion 522 of first surface 504 of first pane 502A. In an advantageous embodiment, outer periphery 526 of protective covering 520 may be sized to protect a portion of first surface 504 of first pane 502A proximate the window sash while the window sash is being painted.

Figure 8 is a flow chart illustrating an exemplary method in accordance with the present invention. The method of figure 8 includes a step of providing an assembly to be masked. For example, this step may include the step of providing an insulating glass unit including a first pane having a first surface. The method of figure 8 also includes the step of providing a desired width of the masked area to a masking calculator. For example, an insulating glass unit may move into a masking station. In the masking station, a dimension of the insulating glass unit may be detected. A controller associated with the masking station may utilize the detected dimension to determine a masked area corresponding to an insulating glass unit having that dimension.

The method of figure 8 also includes the step of providing masking material having a width. In a preferred method, the width of the masking material may be selected to correspond with the width of a masked area of a small insulating glass unit. In this preferred method, a small insulating glass unit may be masked by applying a single strip of masking material to a surface of the small insulating glass unit. Insulating glass units having a dimension larger than the small insulating glass unit may be masked using multiple strips of masking material.

The method of figure 8 also includes the step of determining an optimal number of strips. As described above, for a small insulating glass unit, the optimal number of strips may be one. For other insulating glass units, multiple strips may be desired. The method of figure 8 also includes the step of calculating an overlap dimension. The width of the masking material and the optimal number of strips may be used to calculate a desired overlap dimension to achieve coverage of the masked area.

The method figure 8 also includes the step of applying the optimal number of strips. For example, the optimal number of strips of masking material may be applied to a first surface of a

first pane of an insulating glass unit. In one method in accordance with the present invention, the strips are applied in a sequential fashion with each subsequent strip partially overlapping the preceding strip by the calculated overlapped dimension.

Figure 9 is a perspective of an assembly 700 in accordance with an exemplary embodiment of the present invention. Assembly 700 includes an insulating glass unit 736 having a first pane 702A. A protective covering 720 is disposed over a masked portion 722 of a first surface 704 of first pane 702A. In the embodiment of figure 9, protective covering 720 comprises a single strip 730. Insulating glass unit 736 of assembly 700 includes a second pane 702B and a spacer 738.

In the embodiment of figure 9, a first label 766A, a second label 766B, and a third label 766C are disposed over protective covering 720. In the embodiment of figure 9, each label preferably comprises a sheetstock and a second adhesive overlaying a first face of the sheetstock. In figure 9, indicia may be seen disposed on a second face of the sheetstock of each label.

Figure 10 is a flow chart illustrating an additional exemplary method in accordance with the present invention. The method of figure 10 includes the steps of providing a window assembly and providing information related to the window assembly. The window assembly may, for example, move into a labeling station. In the labeling station, an identifying characteristic of the window assembly may be detected. A controller associated with the labeling station may utilize the detected identifier to determine desirable information associated with the window assembly. The controller may then provide the desired information to a printer.

The method of figure 10 also includes the steps of providing a sheet of material and printing information on the sheet. The sheet of material may comprise, for example, a sheet of paper. In some methods, the sheet of material may be a standard size of paper (e.g., 11 inches by

17 inches). The method of figure 10 also includes the step of printing information on the sheet.

In one method in accordance with the present invention, the sheet may be printed on the fly as part of a manufacturing process for window assemblies. When this is the case, the resulting

information bearing sheet may include information associated with a particular window

assembly. For example, the information printed on the sheet may include advertisements that are

likely to be of interest to a purchaser a particular window assembly. By way of a second

example, the information printed on the sheet may include ratings, such as NFRC ratings which are associated with a particular window assembly.

The step of printing information on the sheet may comprise various printing methods.

Examples of printing methods which may be suitable in some applications include color electrophographic printing, color electrostatic printing, color laser printing, color ink jet printing, and color bubble jet printing.

The method of figure 10 also includes the step of applying the information bearing sheet to the window assembly. The information bearing sheet may be applied, for example, directly to a surface of a pane of the window assembly. In other methods in accordance with the present invention, the information bearing sheet may be applied with a protective covering interposed between the information bearing sheet and a pane of the window assembly.

It is to be appreciated, that various embodiments of a window assembly may be used without deviating from the spirit and scope of the present invention. A window assembly may comprise, for example, a single pane, and/or an insulating glass unit, and/or a window sash. In figure 10, it may be appreciated that the present exemplary method includes the step of transporting the window assembly to a building site. The method of figure 10 also includes the step of installing the window assembly. The step of installing the window the window assembly

may include the step of attaching the window assembly to a building. As described above, the information bearing sheet may include advertisements that are likely to be of interest to persons present in the building. Persons likely to be present in the building may include new home owners, carpenters, business owners, and prospective window purchasers. The information bearing sheet may also include additional information, for example installation instructions associated with the window assembly.

Figure 11 is a perspective view of an assembly 800 in accordance with an exemplary embodiment of the present invention. Assembly 800 includes a window assembly 801 that has been installed in a building 868. Window assembly 801 comprises an insulating glass unit 836 and a window sash 854. An information bearing sheet 844 is attached to insulating glass unit 836. In the embodiment of figure 11, a protective covering 820 interposed between information bearing sheet 844 and insulating glass unit 836. Embodiments are also possible in which information bearing sheet 844 is attached directly to insulating glass unit 836.

In the embodiment of figure 11, information bearing sheet 844 is disposed generally outside of building 868. Information bearing sheet 844 comprises sheetstock having a first surface and a second surface. In figure 11, it may be appreciated that a second indicia 842 is disposed on second surface 808B of sheetstock 846. Second indicia 842 is preferably visible to a viewer located outside of building 868. Information bearing sheet 844 also preferably includes a first indicia printed on the first surface of sheetstock 846 of information bearing sheet 844. In a preferred embodiment, the first indicia is visible to a viewer located generally inside of building 868.

Figure 12 is a perspective view of an assembly 900 in accordance with an exemplary embodiment of the present invention. Assembly 900 includes a window assembly 901 that has

been installed in a building 968. Window assembly 901 comprises an insulating glass unit 936 and a window sash 954. An information bearing sheet 944 is attached to insulating glass unit 936. In the embodiment of figure 12, a protective covering 920 interposed between information bearing sheet 944 and insulating glass unit 936. Embodiments are also possible in which
5 information bearing sheet 944 is attached directly to insulating glass unit 936. In the embodiment of figure 12, information bearing sheet 944 is disposed generally inside of building 968. Information bearing sheet 944 comprises sheetstock having a first surface and a second surface.

In figure 12, it may be appreciated that a first indicia 940 is disposed on first surface 908A of sheetstock 946. First indicia 940 is preferably visible to a viewer located outside of building 968. Information bearing sheet 944 also preferably includes a second indicia printed on the second surface of sheetstock 946 of information bearing sheet 944. In a preferred embodiment, the second indicia is visible to a viewer located generally inside of building 968.

Several forms of invention have been shown and described, and other forms will now be apparent to those skilled in art. It will be understood that embodiments shown in drawings and described above are merely for illustrative purposes, and are not intended to limit the scope of invention defined claims which follow.